

GOODYEAR UNION CITY ENVIRONMENTAL COORDINATOR'S REPORT

MILESTONE ZERO TRASH-to-LANDFILL

ISO/TS 16949:2002



ANSI/ISO 14001:2004

Goodyear - Union City



Todd Turner, Plant Manager

A Brief History

- Initial plant construction commenced on April 1, 1968
- First tire cured October, 1968
- Initial capital investment was \$69 million
- Subsequent capital investment brought the total to over \$450 million
- 2007 wages and benefits \$182 million
- Current employment 2,790 people

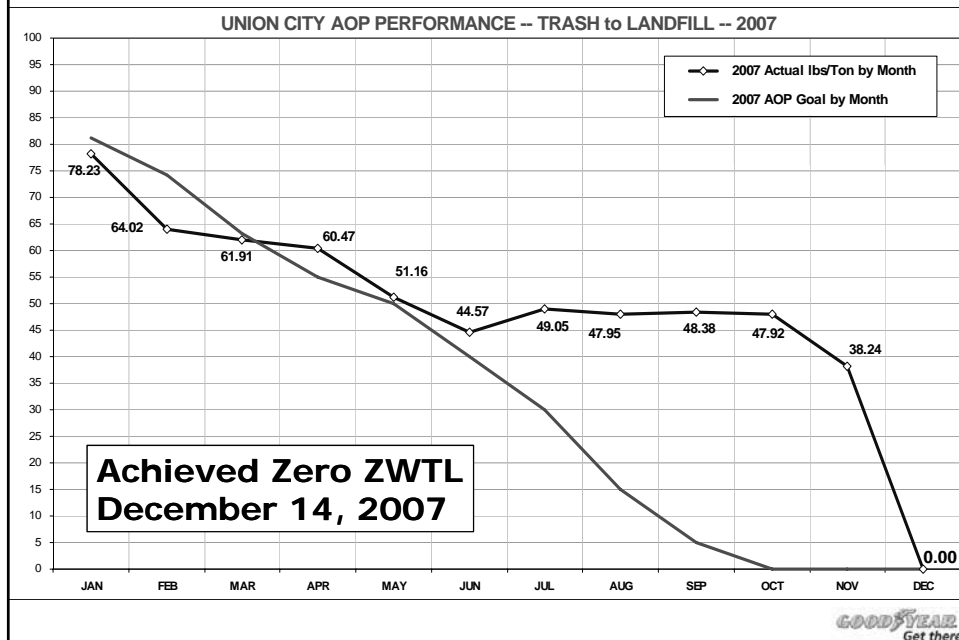
Goodyear - Union City



- 52 Acres under roof
- Mfg capacity up to 60,000 tires/day

GOODYEAR
Get there

UNION CITY AOP PERFORMANCE



WHY ZERO TRASH to LANDFILL?

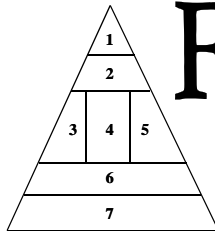
- **SUPERFUND LIABILITY**
- **GOODYEAR CORPORATE REQUIREMENT TIED to ANSI/ISO-14001:2004 CERTIFICATION**
- **RETURN on INVESTMENT**

WHY ZERO TRASH to LANDFILL?

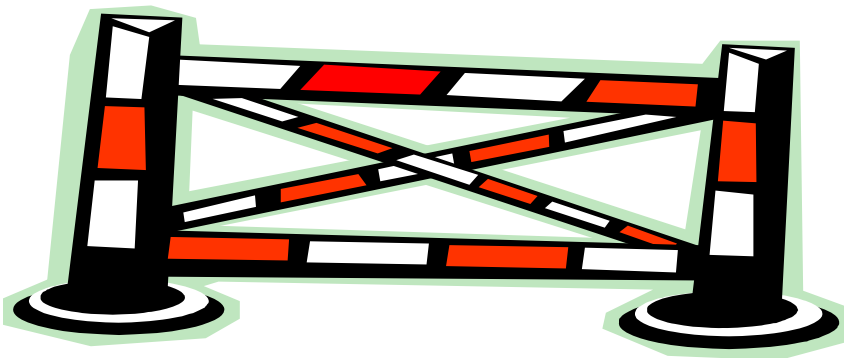
- **OE CUSTOMER BENCHMARK**
- **TENNESSEE POLLUTION PREVENTION PARTNERSHIP RECOGNITION**
- **ENVIRONMENTAL RESPONSIBILITY as a CORPORATE CITIZEN**

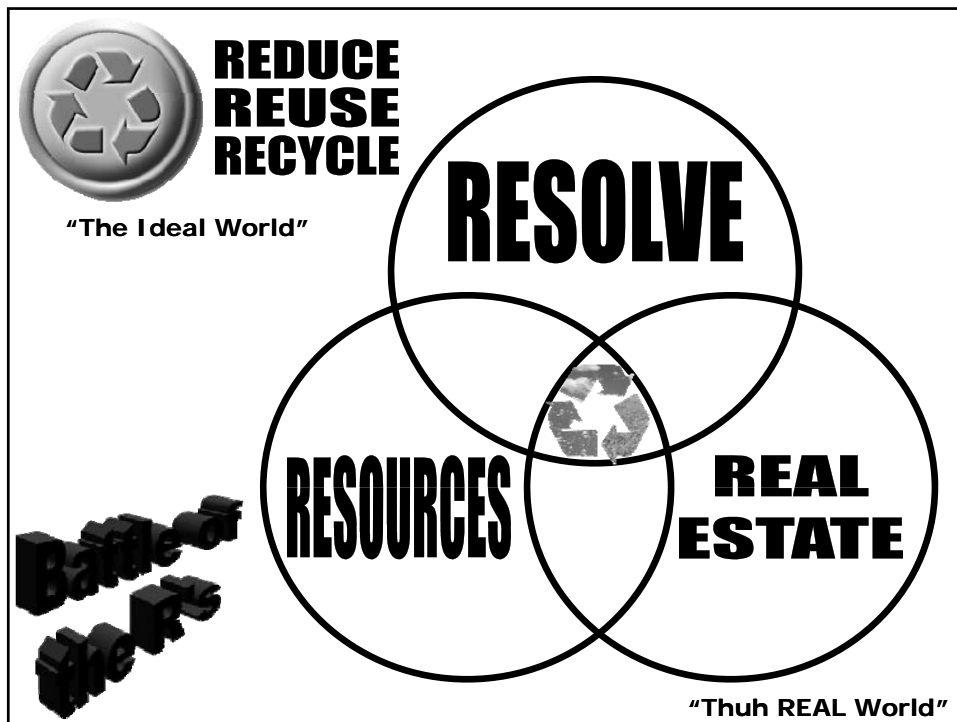


GOODYEAR
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FUNDAMENTAL BARRIERS





REDUCE		RESOURCES
REUSE	VERSUS	REAL ESTATE
RECYCLE		RESOLVE
In the REAL WORLD of BUSINESS DECISIONS		

- **RESOURCES** – capital/expense funding and personnel allocation.
- **REAL ESTATE** – areas protected from the elements to segregate and store recyclables.
- **RESOLVE** – management support; social issues; paradigm shifts.

WASTE STREAM DIVERSION PROCESSES SCRAP TIRES



SCRAP TIRES – ENERGY RECOVERY



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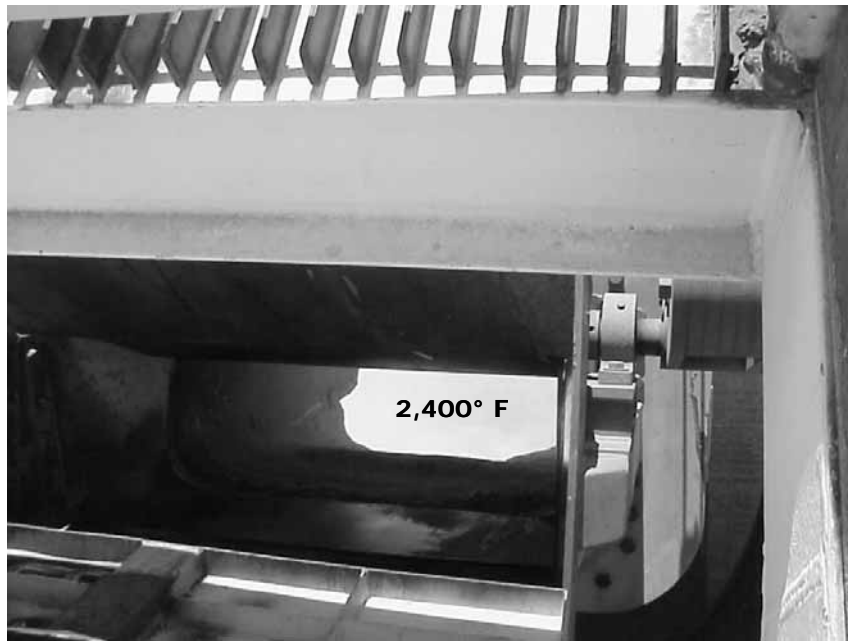


SCRAP TIRES – ENERGY RECOVERY



Mike Cary, Solid Waste Director
Obion County

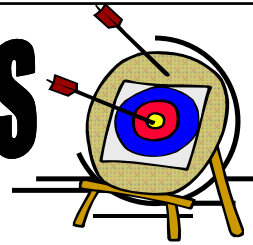
SCRAP TIRES – ENERGY RECOVERY



SCRAP TIRES – ENERGY RECOVERY



RECYCLING CHALLENGES



**UNCURED (GREEN)
TIRES**

Monday, January 22, 2007 43" Bag

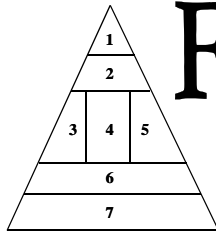


Monday, January 22, 2007 43" Bag



Monday, January 22, 2007 43" Bag





FUNDAMENTAL BARRIERS

GREEN TIRE BAGGING

- **Cost of Bags**
- **Employee Resistance to Bagging**
- **Cost of Energy Recovery**

LANDFILL DIVERSION PROCESSES OTHER WASTE STREAMS



SCRAP LDPE – RECYCLE



SCRAP LDPE – RECYCLE



SCRAP LDPE – RECYCLE



SCRAP LDPE – RECYCLE



SCRAP LDPE – RECYCLE



SCRAP BLADDERS – RECYCLE



SCRAP BLADDERS & LDPE – RECYCLE



SCRAP METAL – RECYCLE



SCRAP BATTERIES – RECYCLE



SCRAP BATTERIES – RECYCLE



FLUORESCENT BULBS – RECYCLE



INK JET / TONER CARTRIDGES – RECYCLE



ALUMINUM CANS / PLASTIC BOTTLES RECYCLED



The collage consists of three black and white photographs. The top left photo shows a crushed aluminum can of Pepsi. The top right photo shows a crushed plastic bottle of Dasani water. The bottom center photo shows two large black recycling bins with 'RECYCLE' labels, situated in a room with wood-paneled walls and a door.

[illegible]

E-WASTE – RECYCLE



E-WASTE – RECYCLE

COMPUTER MONITORS, TV's

ALL OTHER E-Waste



USED OIL FILTERS – RECYCLE



USED HYDRAULIC FLUID – RECLAIM



USED HYDRAULIC FLUID – RECLAIM

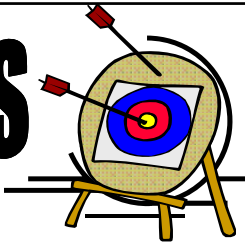


USED OIL – ENERGY RECOVERY



Waste lubricating and hydraulic oils are taken to the Oil/Water Separator in the Banbury basement.

RECYCLING CHALLENGES



**CARBON
BLACK**



CARBON BLACK – RECYCLE



CARBON BLACK – RECYCLE



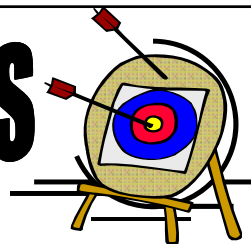
CARBON BLACK – RECYCLE



CARBON BLACK – RECYCLE



RECYCLING CHALLENGES



**WIRE FRICTION
(steel belts)**

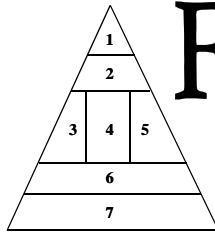
Shredding Experiment July 27, 2007











FUNDAMENTAL BARRIERS

WIRE FRICTION

- **Packaging for Waste-to-Energy Vendor**
- **Cost of Disposition**

RAPID IMPROVEMENT ACTIVITY WIRE CALENDER WIND-UP

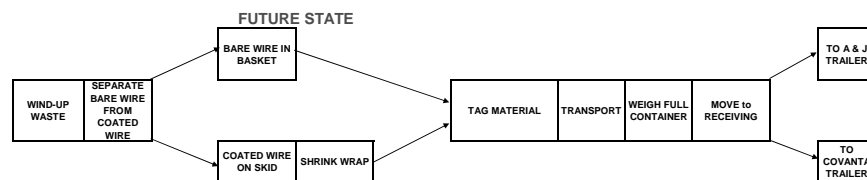
BEFORE



AFTER



WIND UP WASTE



RAPID IMPROVEMENT ACTIVITY SHEARS – REPAIR WASTE

BEFORE



AFTER



SHEARS REPAIR WASTE

FUTURE STATE

SHEARS REPAIR WASTE	WEIGHED AT REPAIR AREA	COLLECTED BY DESIGNATED ASSOCIATE	ROLLED UP	SHRINK WRAP ROLLS	3 LAYERS PER PALLET	SHRINK WRAP	WEIGHED IN AREA	MOVE TO RECEIVING	TO COVANTA
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RAPID IMPROVEMENT ACTIVITY TIRE ROOM / G3 RETURNS

BEFORE



AFTER



TIRE ROOM / G3 RETURNS

FUTURE STATE →

TIRE ROOM / G3 RETURNS	BUILDER ID's DEFECT	BUILDER ID's SHEAR #	BUILDER HANG W.F. ON RACK	ALL WASTE IS COLLECTED DURING DAY	ACUMULATED AT AREA MANAGER'S DESK	DEFECTS ARE REVIEWED	PACKAGE TO STANDARD	MOVE to RECYCLING CENTER
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RAPID IMPROVEMENT ACTIVITY TIRE ROOM / G3 – BUILDER’S WASTE

BEFORE



AFTER



TIRE ROOM / G3 BUILDER'S WASTE

FUTURE STATE →

TIRE ROOM / G3 BUILDER'S WASTE	PICKED UP BY DESIGNATED ASSOCIATE	TRANSPORT TO WEIGH AREA	WEIGHED	PACKAGE TO STANDARD	MOVE to RECYCLING CENTER
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SHIPPING WASTES for WASTE-to-ENERGY CONVERSION

GOODYEAR
Get there



COVANTA HUNTSVILLE, INC.



COVANTA HUNTSVILLE, INC.

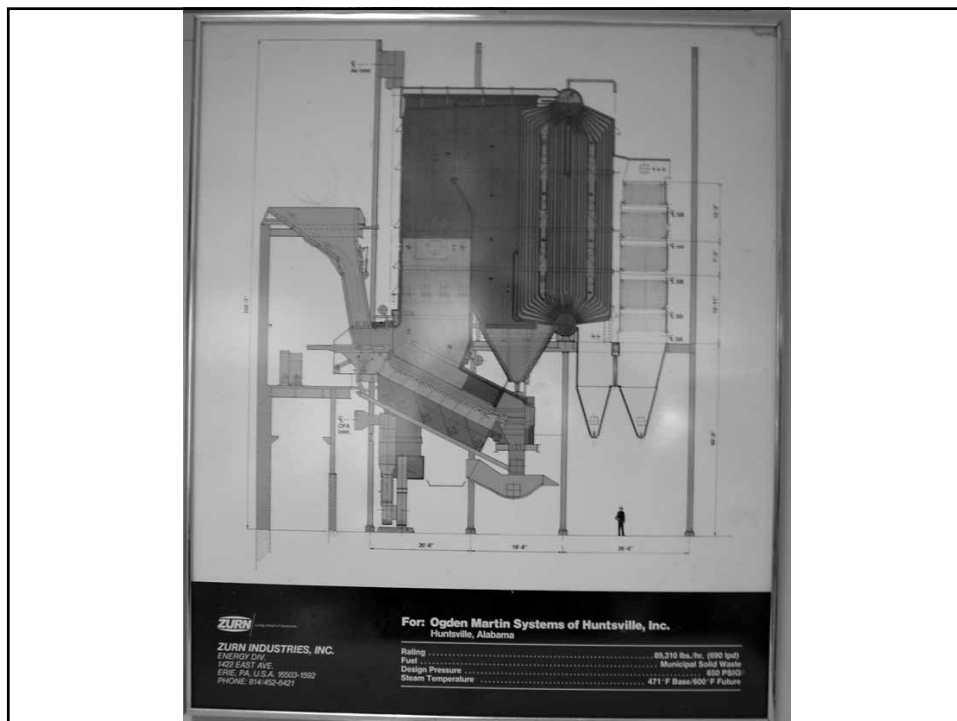
Owner: Solid Waste Disposal
Authority of the City
of Huntsville,
Alabama

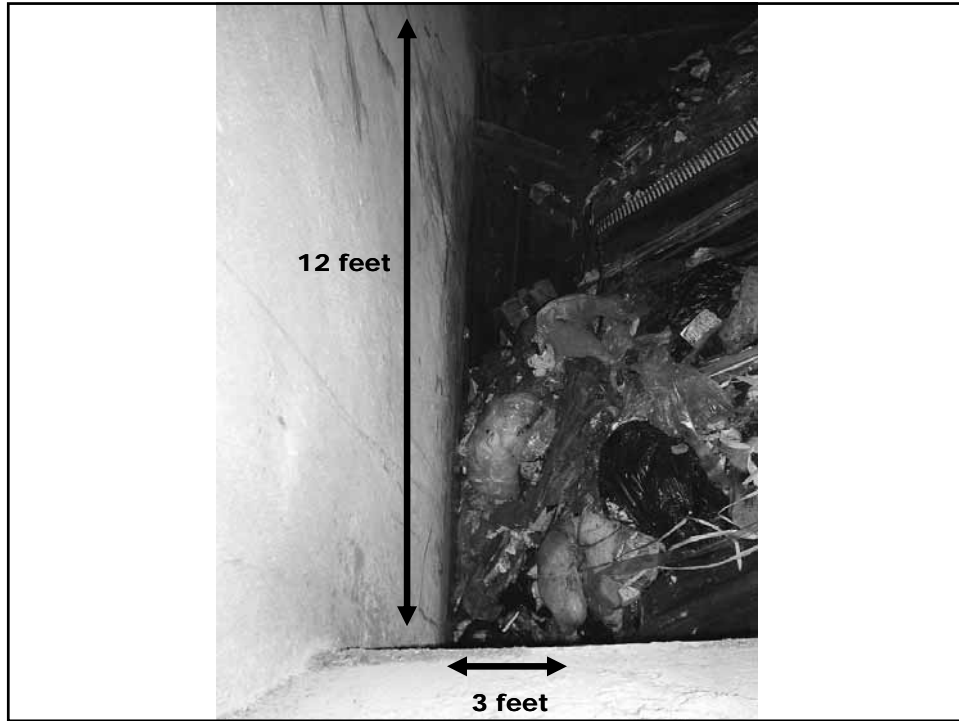
Operator: Covanta Energy

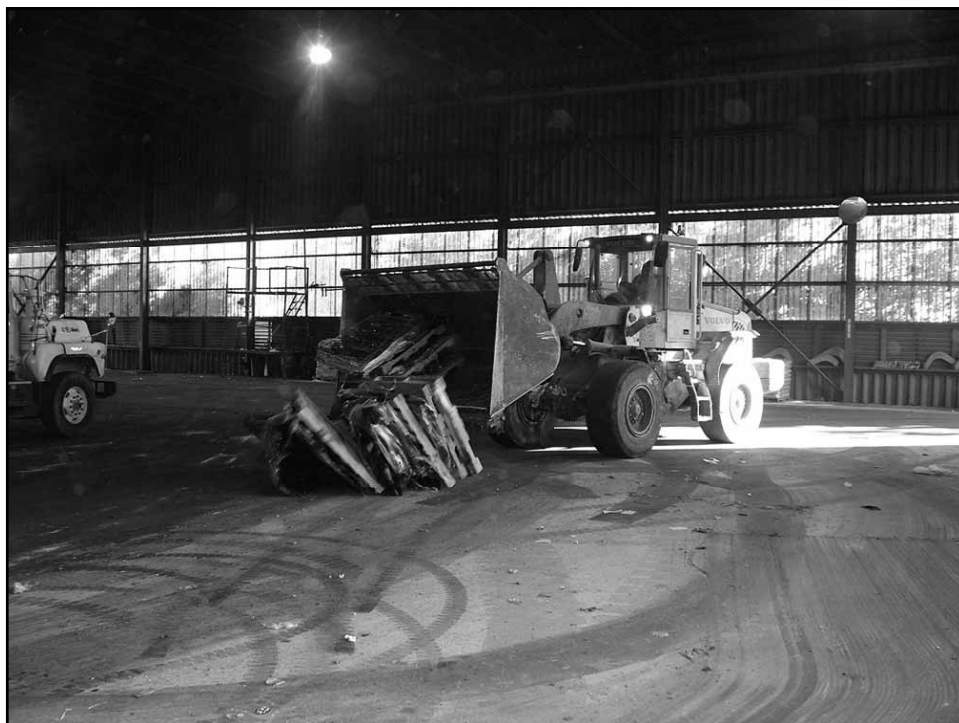
Customer: U.S. Army
Redstone Arsenal

Capacity: 600 tons trash/day

Steam: 89,000 lbs/hr/unit







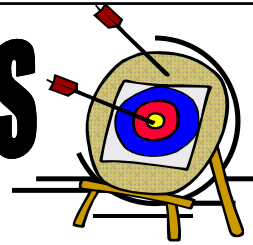








RECYCLING CHALLENGES



**MILLING
WASTE**

SCRAP RUBBER – REUSE



SCRAP RUBBER – RECYCLE



SCRAP BEAD RUBBER – RECYCLE



SCRAP BEAD RUBBER – RECYCLE



SCRAP RUBBER – PREVIOUSLY LANDFILLED



SCRAP RUBBER – PREVIOUSLY LANDFILLED



SCRAP RUBBER – PREVIOUSLY LANDFILLED

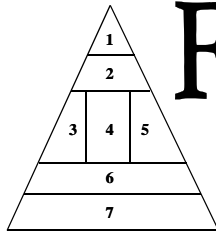


SCRAP RUBBER – PREVIOUSLY LANDFILLED



SCRAP RUBBER – PREVIOUSLY LANDFILLED





FUNDAMENTAL BARRIERS

MILLING WASTE

- Capturing the various waste streams at the point of generation
- Packaging for Recyclers

RAPID IMPROVEMENT ACTIVITY MIXING

BEFORE



AFTER



FUTURE STATE MILLING

DISPOSITION	TAG	PLACE in PROPER CONTAINER	WEIGH FULL CONTAINER	MOVE to RECYCLING CENTER
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